

$140,142$ Cerium Resolved Resonance Region Evaluation

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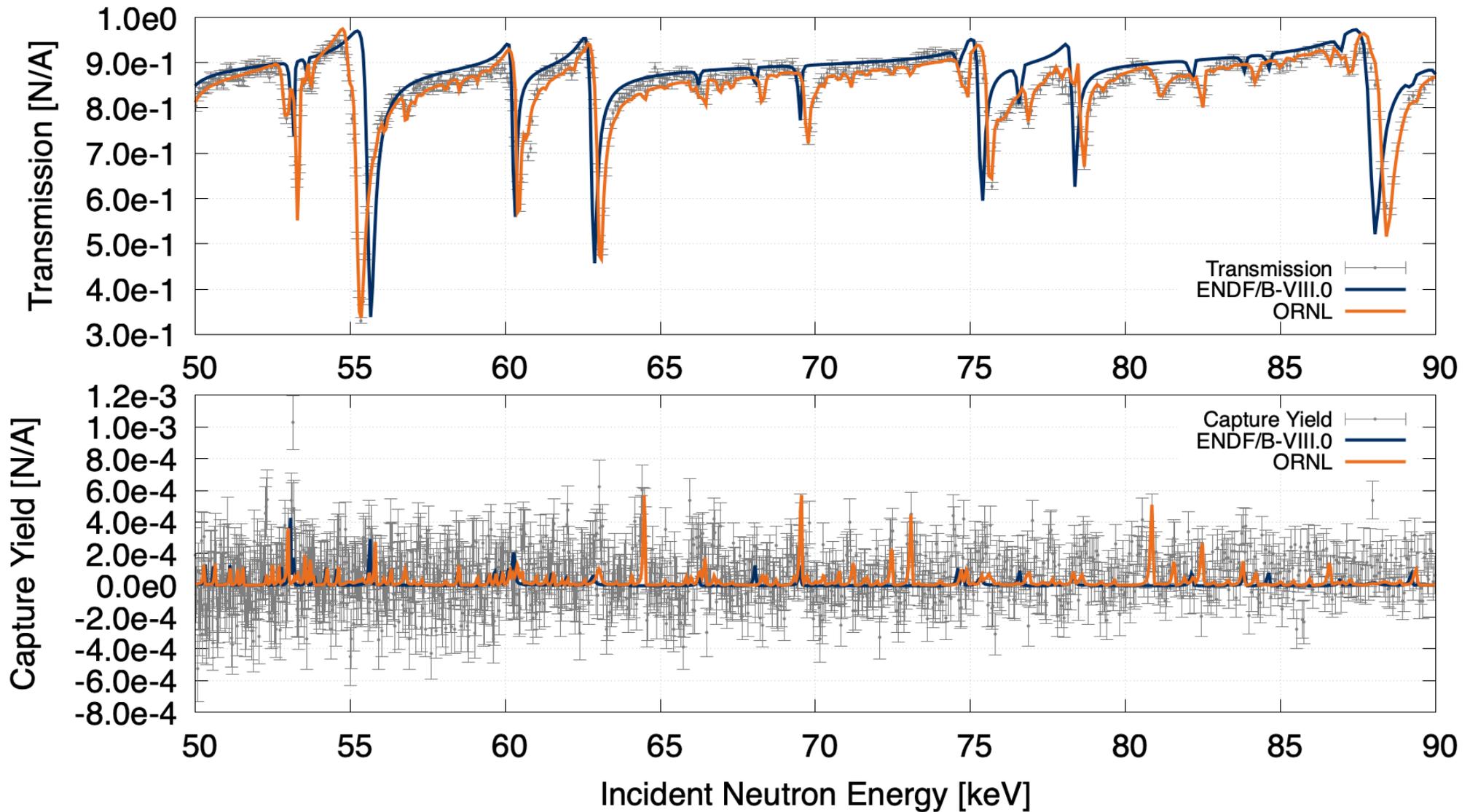
Oak Ridge National Laboratory

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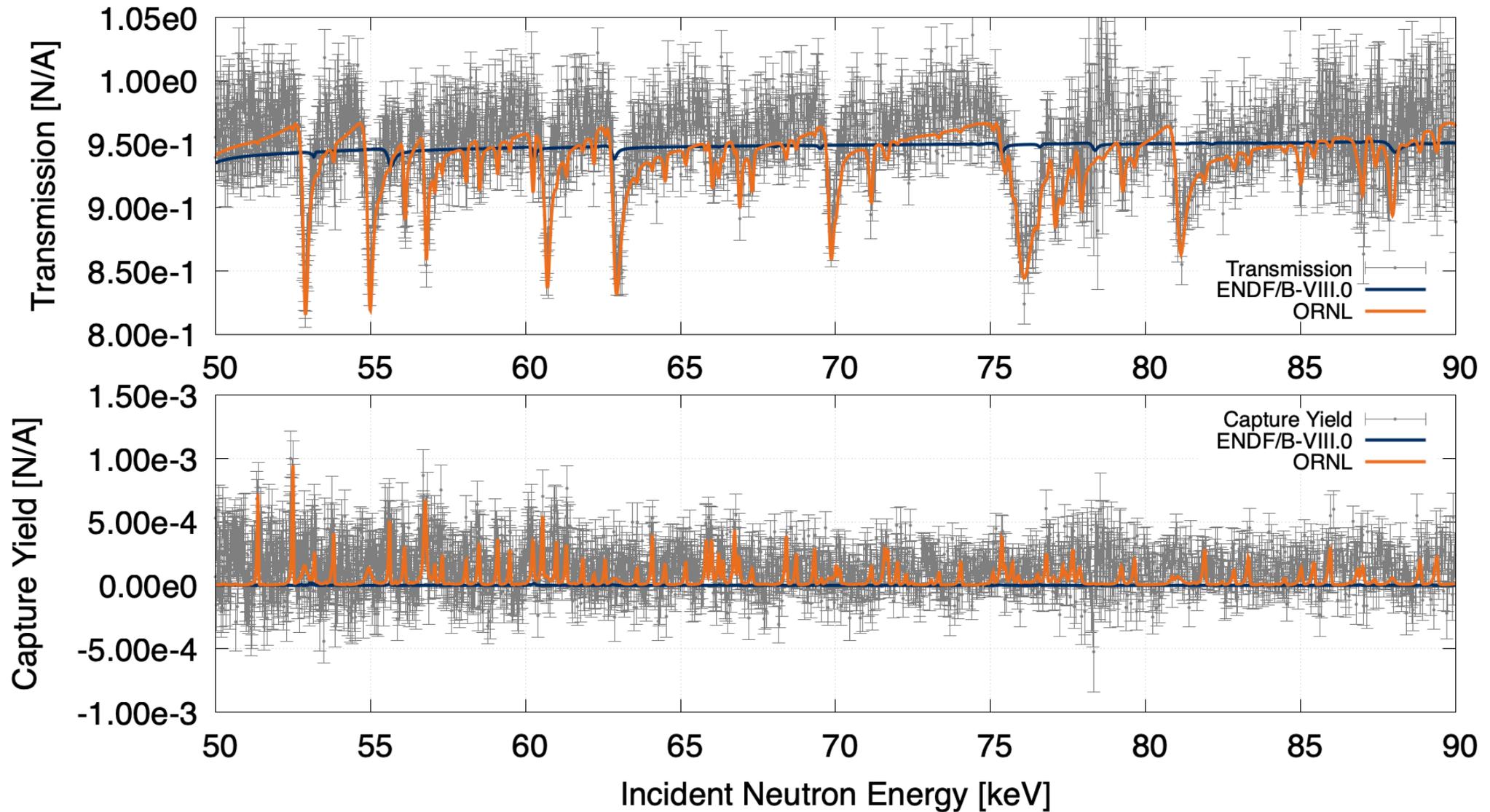
Overview of $^{140,142}\text{Ce}$ Isotopes

- New evaluations of $^{140,142}\text{Ce}$ requested by Hanford Plutonium Finishing plant to the Nuclear Criticality Safety Program
- Current ENDF/B-VIII.0 evaluation has error in the 1-2 keV range, was evaluated using multi-level Breit-Wigner, and ^{142}Ce has room for extending resolved resonance region range from current 13 keV
- New transmission and capture measurements of $^{\text{nat}}\text{Ce}$ & ^{142}Ce from K. Guber
- No known integral experiments prominently feature Cerium

Results: natCe

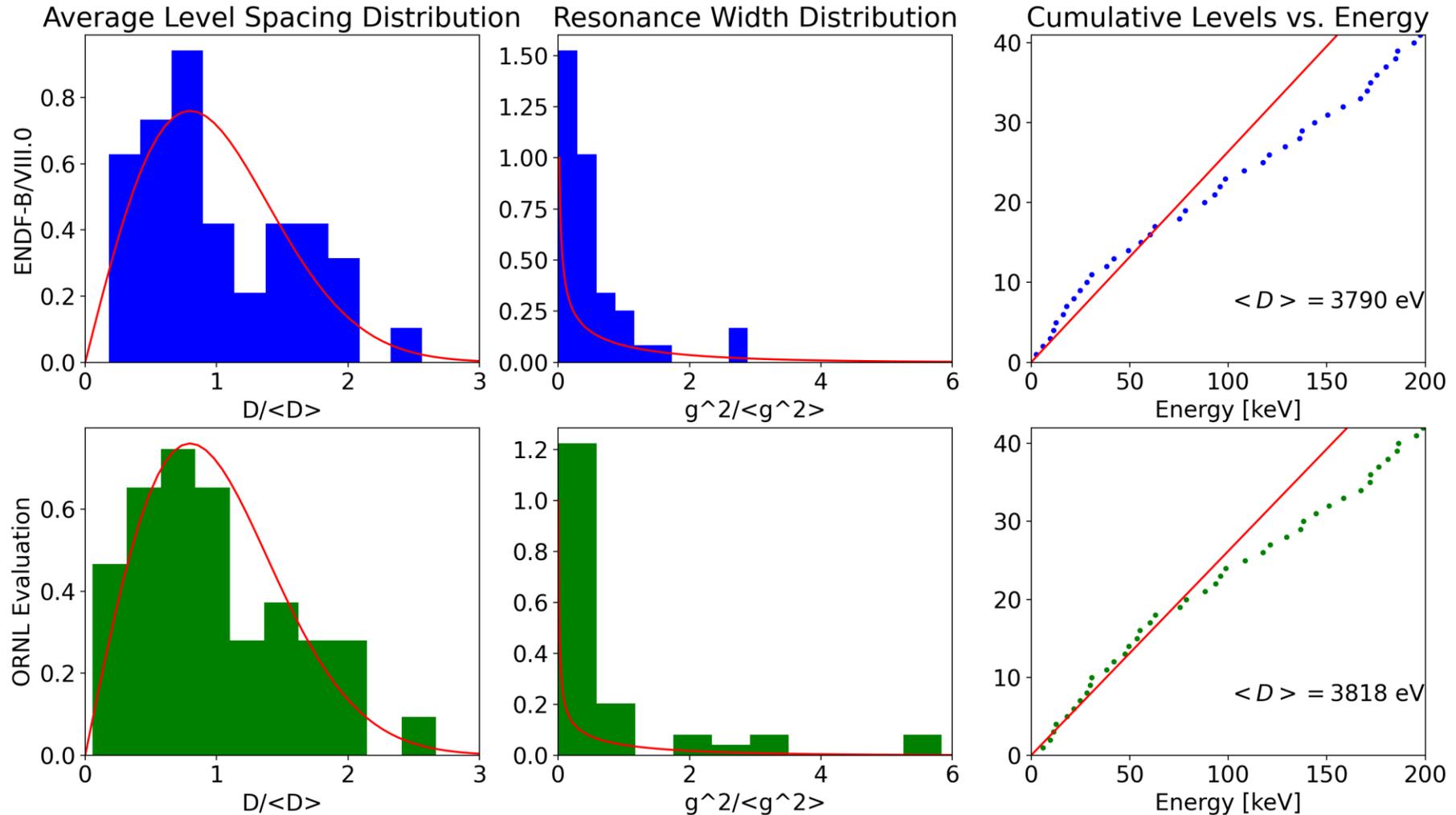


Results: ^{142}Ce



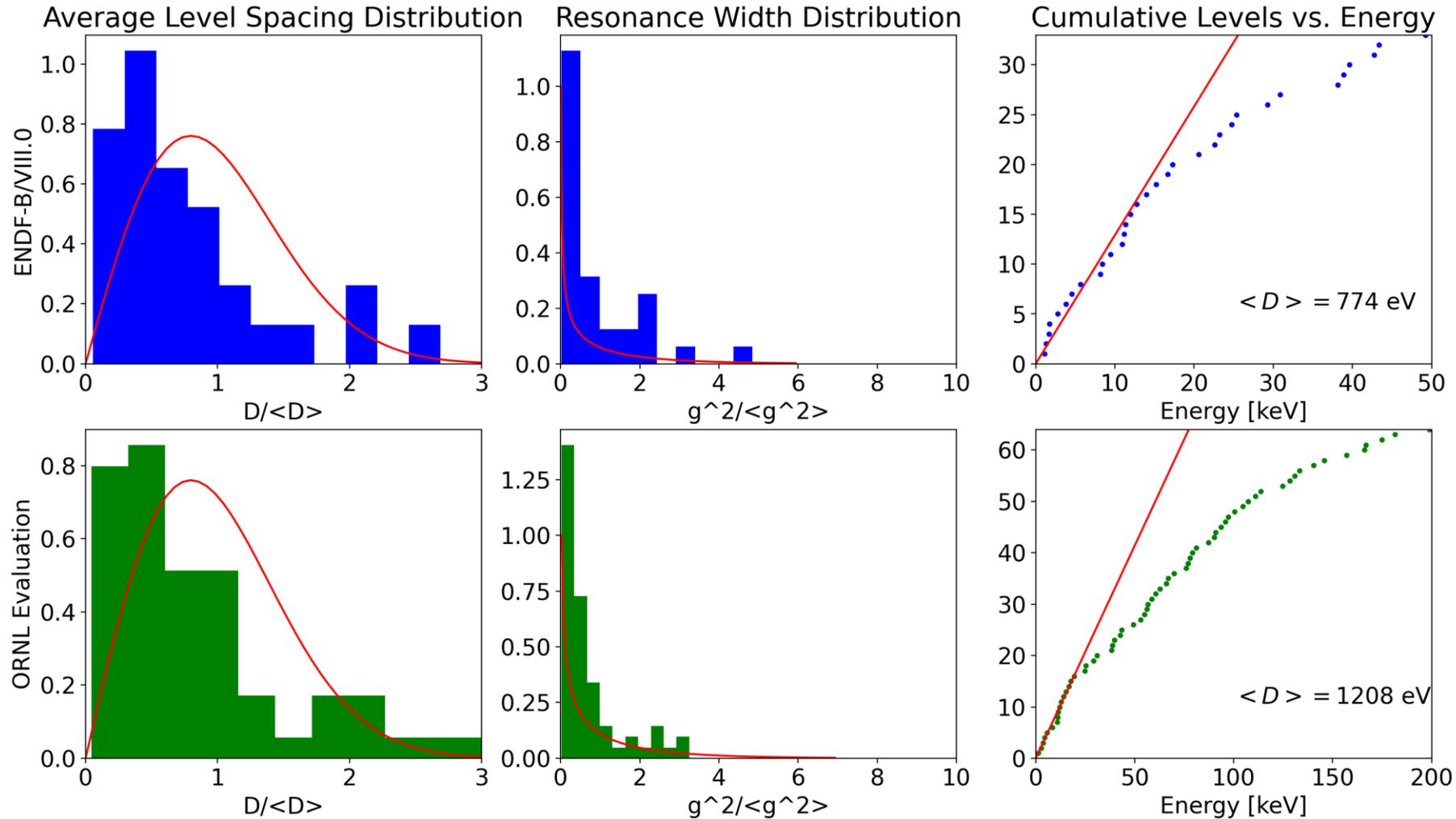
Results: ^{140}Ce statistical check

Ce-140 s-wave statistical checks



Results: ^{142}Ce statistical check

Ce-142 s-wave statistical checks

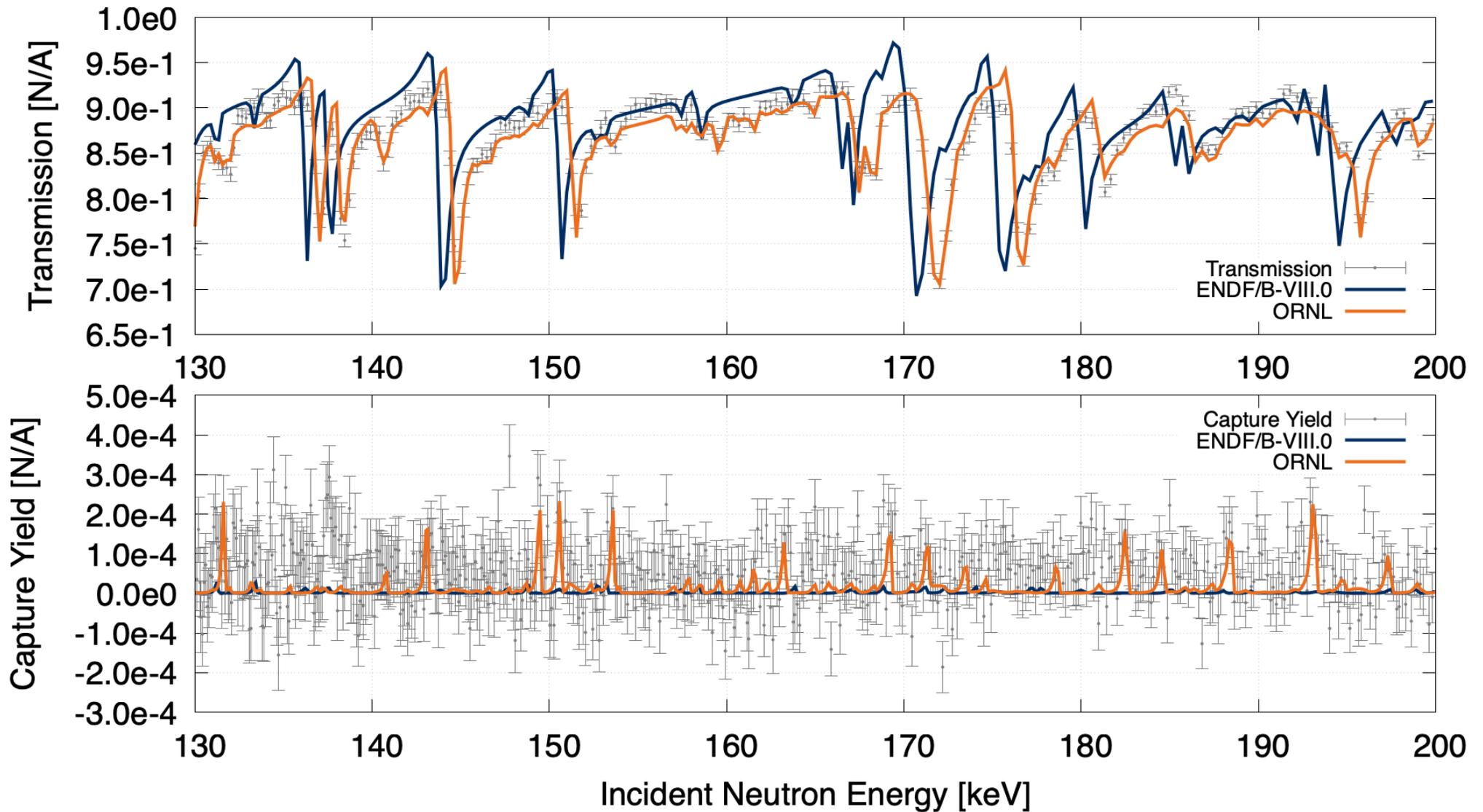


Acknowledgements

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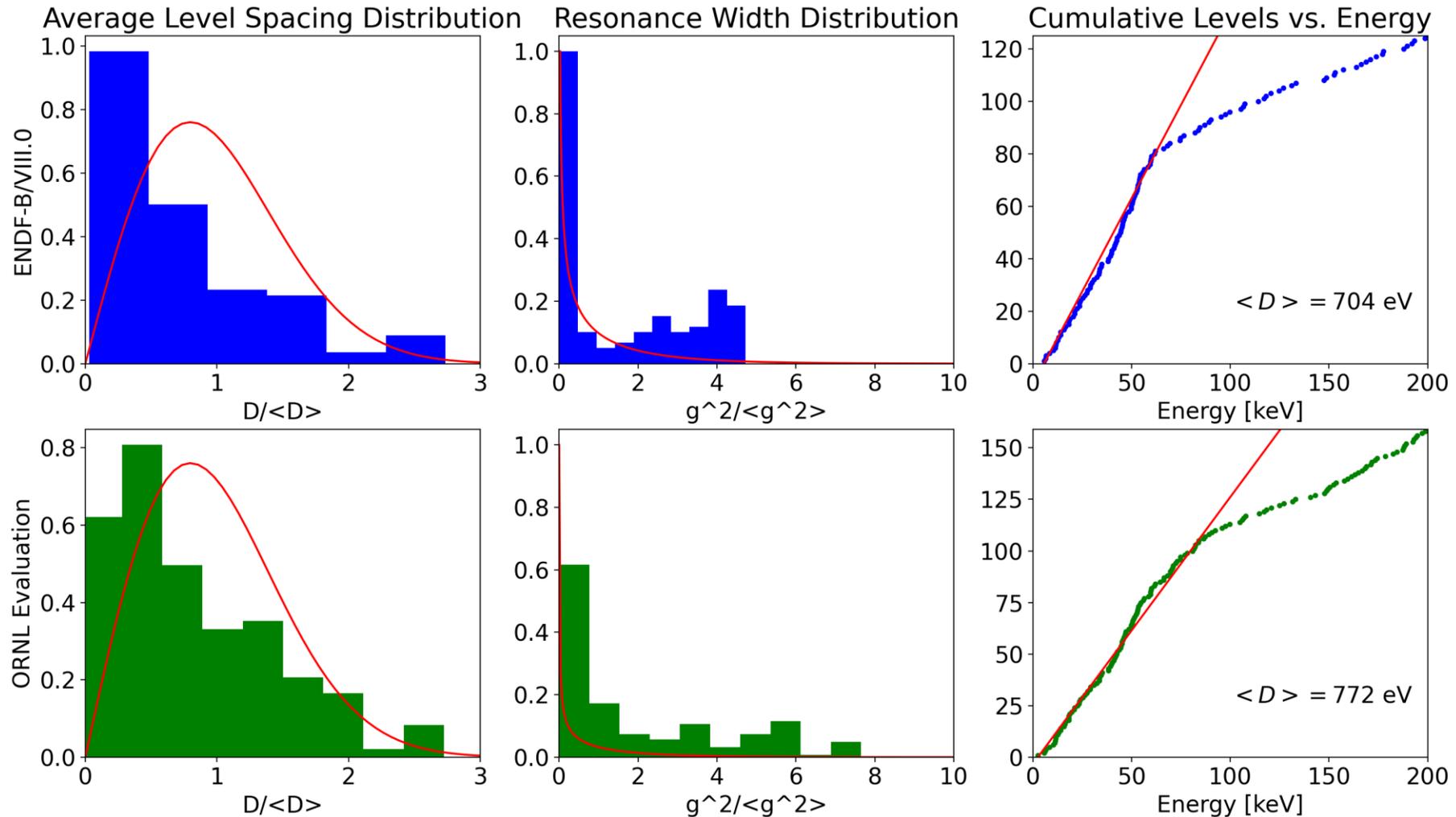
Questions?

Extra Slides: ^{140}Ce



Extra Slides: ^{140}Ce statistical check

Ce-140 p-wave statistical checks



Results: ^{142}Ce statistical check

Ce-142 p-wave statistical checks

